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Sustainable development: sustainable mountain development

Sustainable mountain development

Report of the Secretary-General

Summary

The present report was prepared in response to the General Assembly resolution 66/205, in which the Assembly requested the Secretary-General to report to it at its sixty-eighth session on the status of sustainable development in mountain regions. The report describes the status of sustainable mountain development at the national and international levels, including an overall analysis of the challenges that lie ahead, and provides suggestions for consideration by the Assembly as to how to continue to promote and effectively sustain development in mountain regions around the world within the existing policy context, including chapter 13 of Agenda 21, adopted at the United Nations Conference on Environment and Development, the Plan of Implementation of the World Summit on Sustainable Development ("Johannesburg Plan of Implementation"), the Millennium Development Goals and the follow-up actions of the United Nations Conference on Sustainable Development. The report was prepared by the Food and Agriculture Organization of the United Nations in collaboration with Governments, relevant agencies of the United Nations system and other organizations.

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I. Introduction

1. In 1998, the General Assembly adopted resolution 53/24, by which it proclaimed 2002 the International Year of Mountains. The Assembly encouraged Governments, the United Nations system and all other actors to take advantage of the year in order to increase awareness of the importance of sustainable mountain development. In 2003, the Food and Agriculture Organization of the United Nations (FAO) prepared a report on the achievements of the Year, which was transmitted to the General Assembly by the Secretary-General (A/58/134). The activities of the Year supported the establishment of 78 national committees for country-level action and strengthened partnerships with stakeholders in mountain issues, culminating in the launch of the International Partnership for Sustainable Development in Mountain Regions (Mountain Partnership) at the World Summit on Sustainable Development, held in Johannesburg, South Africa, from 26 August to 4 September 2002.

2. The International Year of Mountains led to the adoption of General Assembly resolution 57/245, by which the Assembly designated 11 December as International Mountain Day, as from 2003, and encouraged the international community to organize events at all levels on that day to highlight the importance of sustainable mountain development.

3. In its resolutions 59/238, 60/198, 62/196, 64/205 and 66/205, the General Assembly decided to consider, at its sixtieth, sixty-second, sixty-fourth and sixty-sixth sessions, respectively, under the agenda item entitled "Sustainable development", sub-items related to sustainable mountain development. At each of those sessions, the Secretary-General submitted reports entitled "Sustainable mountain development" to the Assembly (A/60/309, A/62/292, A/64/222 and A/66/294).

4. The present report is submitted in accordance with General Assembly resolution 66/205, in which the Assembly requested the Secretary-General to submit a report to it at its sixty-eighth session on the status of implementation of sustainable development in mountain regions. The report was prepared by FAO in collaboration with Governments, relevant agencies of the United Nations system and other organizations.

II. Background and challenges

5. Mountains are the source of most of the Earth's freshwater, repositories of biological diversity, popular destinations for recreation and tourism, areas of cultural diversity, knowledge and heritage and fragile ecosystems of global importance. Covering about one quarter of the world's land surface, mountains are home to about 12 per cent of the world's population and provide essential goods and services to more than half of humankind. Yet many of the world's most impoverished and food-insecure people live in mountain regions. There is a need to ensure the ecological health and the economic and social improvement of mountain areas, both for the sake of mountain inhabitants and for populations in lowland areas.

6. Awareness of the importance of mountain ecosystems and communities has increased since the adoption at the United Nations Conference on Environment and Development in 1992 of Agenda 21, which contained a chapter entitled

"Managing fragile ecosystems: sustainable mountain development"[1] In the Plan of Implementation of the World Summit on Sustainable Development ("Johannesburg Plan of Implementation"),[2] adopted in 2002, actions required to address the sustainable development of mountain regions are set out in paragraph 42. These measures serve as the overall policy framework for sustainable mountain development.

7. Despite increased recognition of mountain issues, significant constraints remain to attaining sustainable development in mountain regions, exacerbated by climate change and increases in urbanization and migration. Mountain communities, with their knowledge, experience and capacity for managing fragile environments, can offer the key to sustainable solutions. As the demand for goods and services from mountains grows steadily, new opportunities for investment are emerging which offer scope for economic development. Green economy can be considered a tool for development in mountains as long as it is seen in the context of sustainable development and poverty eradication. There is a clear need for higher-level attention to mountain issues, increased investment in mountain areas, enhanced coordination and collaboration and a stronger enabling environment.

8. The United Nations Conference on Sustainable Development, held in Rio de Janeiro, Brazil, from 20 to 22 June 2012, was an important opportunity for sustainable mountain development to feature prominently on the global agenda. Three paragraphs on mountains were included in the outcome document of the Conference, "The future we want";[3] among other provisions, States were invited to strengthen cooperative action with effective involvement and sharing of experience of all relevant stakeholders, by strengthening existing arrangements, agreements and centres of excellence for sustainable mountain development, as well as exploring new arrangements and agreements, as appropriate.

III. National, regional and transboundary actions

9. It is beyond the scope of the present report to describe the large range of activities undertaken by countries and regions, but selected examples and highlights are provided below.

A. Africa

10. The four-year research and development project entitled "Climate change impacts on ecosystem services and food security in Eastern Africa" is creating new knowledge of the effects of climate change on mountain ecosystems and their regulating services in the Eastern Afromontane biodiversity hotspots in Kenya, the United Republic of Tanzania and Ethiopia. The ongoing monitoring and research

[1] *Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992*, vol. I, *Resolution adopted by the Conference* (United Nations publication, Sales No. E.93.I.8 and corrigendum), resolution 1, annex I, chapter 13.

[2] *Report of the World Summit on Sustainable Development, Johannesburg, South Africa, 26 August-4 September 2002* (United Nations publication, Sales No. E.03.II.A.1 and corrigendum), chap. I, resolution 2, annex.

[3] See General Assembly resolution 66/288, annex, paras. 210-212.

activities address crop pollination, integrated pest management and climate change adaptation strategies.

11. The United Nations Environment Programme (UNEP), with support from Norway, is undertaking a consultative process across Africa with the United Nations Educational, Scientific and Cultural Organization (UNESCO) and other partners to develop a better understanding of mountain ecosystems, the services they provide and their sensitivity to various threats induced by human activities. UNEP is also developing an atlas of the changing African mountain environment to convey environmental and socioeconomic data in a cartographic format.

12. In West Africa, FAO and UNEP are jointly implementing the regional Fouta Djallon Highlands Integrated Natural Resources Management Project, funded by the Global Environmental Facility (GEF). The project is active in Gambia, Guinea, Guinea-Bissau, Mali, Mauritania, Niger, Senegal and Sierra Leone. In the first, four-year phase, the framework convention for regional collaboration was finalized and pilot site interventions were established to protect natural resources, increase agricultural productivity and improve the livelihoods of the rural population. The second, six-year phase is expected to start in 2014 and will focus on the consolidation of achievements and on fostering country ownership and investment.

13. The Government of Lesotho funded a national watershed management project for the period 2007-2012 to address poverty and land degradation issues. The project was aligned with the national goal of improving food security at household level by creating employment through engagement of workers from local communities in the rehabilitation of degraded lands.

14. A regional African meeting was organized in Kigali by the Albertine Rift Conservation Society and the secretariat of the International Partnership for Sustainable Development in Mountain Regions (Mountain Partnership), with support from the World Bank and the MacArthur Foundation and in collaboration with the International Union for Conservation of Nature (IUCN). Participants agreed to create a new Mountain Partnership African Champions Committee to move the region's sustainable mountain development agenda forward.

15. Lesotho and South Africa are collaborating through a transboundary initiative, the Maloti Drakensberg Transfrontier Programme, to sustainably manage the natural and cultural heritage of the Maloti and Drakensberg mountains.

16. Since 2002, Algeria has had a programme promoting agriculture and rural development in all territories, including mountainous areas. For the period 2009-2014, the programme comprises 12,148 projects of integrated rural development, including 4,193 in mountain areas. In 2013, a new support programme for farmers and smallholders will be implemented and will cover marginalized areas including mountains.

17. In Morocco, FAO in collaboration with the Ministry of Agriculture and Sea Fisheries launched a pilot project in 2011 in the province of Azilal, a mountainous area dominated by rain-fed agriculture. The project aims to provide technical support for small farmers adopting conservation agriculture and to introduce a new conceptual framework integrating different technical, economic and socio-institutional dimensions of the adaptation of agriculture to change climate.

B. Asia

18. In India, from 2011 to 2013, the Central Soil and Water Conservation Research and Training Institute organized a national consultation to revise the course curriculum of training programmes on mountain soil and water conservation and integrated watershed management. The Institute has developed several technologies and live models and led demonstrations and capacity-building activities for farmers, local leaders, watershed functionaries, government officials and non-governmental organizations present in the Indian Himalayas on integrated water management, soil and water conservation technologies, river management and improved water use efficiency.

19. In the framework of the Social, Economic and Environmental Development (SEED) project and the Karakorum Trust project, the Ev-K2-CNR Committee of Italy has successfully completed the management plan for Central Karakorum National Park, in the north of Pakistan, funded by the Governments of Italy and Pakistan. The project aims to support local authorities and stakeholders in building capacity in natural resources management.

20. The International Centre for Integrated Mountain Development (ICIMOD), together with the Asia Network for Sustainable Agriculture and Bioresources and the Federation of Community Forest Users, Nepal, has piloted a forest carbon trust fund in Nepal as part of a project on reducing emissions from deforestation and forest degradation financed by the Government of Norway. It is one of the world's first carbon offset projects involving and training local communities in carbon monitoring.

21. The transboundary biodiversity initiative for the conservation of Mount Kailash, implemented in 2012 by UNEP, ICIMOD and the German Agency for International Cooperation (GIZ), is a South Asian landmark initiative between China, India and Nepal in the field of biodiversity conservation and sustainable development in the Himalayas.

22. The Asian Development Bank is supporting the Living Himalayas Initiative, a new regional cooperation programme between Bangladesh, Bhutan, India and Nepal.

C. Middle East

23. Under the Environmental Fund for Lebanon, implemented by GIZ in coordination with the Ministry of Environment and the Council for Development and Reconstruction, a mountain climate change adaptation project is being implemented to provide global solutions to local environmental priorities in several nature reserves.

D. Central Asia

24. A FAO/GEF project for the sustainable management of mountain forests and land resources of Kyrgyzstan under climate change conditions was launched in March 2013. It aims to introduce innovative practices and strengthen coordination and capacities for the rehabilitation and sustainable management of forests and agricultural lands in mountain ecosystems. The national centre for the development

of mountain areas of Kyrgyzstan published a book providing a justification of external debt for sustainable development swaps in mountain States.

25. The Altai Republic of the Russian Federation has created the International Coordinating Council "Our Common Home — Altai", bringing together governmental and non-governmental organizations from participating countries, and established the Alliance of Mountain Regions of Russia as an international mechanism regulating transboundary cooperation and the protection of the Altai mountains, which span the Russian Federation, Mongolia, Kazakhstan and China.

26. An integrated transboundary project on sustainable land management in the High Pamir and Pamir-Alai Mountains of Central Asia was implemented by the Committee on Environmental Conservation of Tajikistan and the National Centre for Mountain Regions Development of Kyrgyzstan, with support from the United Nations University, UNEP and a range of international partners.

E. Europe

27. The Ministry of Local Government and Regional Development of Norway is leading an initiative for development in mountain areas, focusing on collaboration between public and private stakeholders to market tourism and high-quality food products, and a programme for local and regional parks which promotes sustainable rural development and aims to be a model for local and regional cooperation.

28. In Italy, the European Union helps support research and cooperation projects in mountain areas on a wide range of issues, primarily the effects of climate change, natural hazards, integrated risk management, climate-proof spatial planning, ecological networks and sustainable tourism. At the international level, the Government of Italy continues to participate in the activities of the Mountain Partnership and provides financial support to its secretariat.

29. The Twelfth Alpine Conference (Conference of Contracting Parties to the Alpine Convention), held in Poschiavo, Switzerland on 7 September 2012, dedicated its report on the state of the Alps to demographic changes and recognized sustainable tourism as a priority issue. In the context of the Action Plan on Climate Change in the Alps, it created a new platform to improve international cooperation on energy issues. A working group on mountain forests was set up to improve the management of Alpine forests and reinforce their protective role and economic value.

30. From 2010 to 2012, the University of Geneva, Switzerland, coordinated the project on geographic specificities and development potentials in Europe for the European Observation Network for Territorial Development and Cohesion. This project used data from all of Europe's 125,049 municipalities to analyse social and economic structures and trends in areas with geographic specificities. The mountain component of the project was coordinated by the Centre for Mountain Studies at Perth College, University of the Highlands and Islands, United Kingdom of Great Britain and Northern Ireland. The outputs represent the latest assessment of Europe's mountain areas.

31. The Environment and Security Initiative has been instrumental in supporting the UNEP-led project on cooperation for the protection and sustainable development of mountain regions in the South Caucasus. The goal is to enhance cooperation by supporting coordination of environmental initiatives in the region, exchanging

information across borders, determining targets for all stakeholders and supporting the coordinated development and implementation of programmes.

32. In May 2011 the third meeting of the Conference of the Parties to the Framework Convention on the Protection and Sustainable Development of the Carpathians (Carpathian Convention) was successfully held in Bratislava. The meeting led to the adoption of the Protocol on Sustainable Forest Management and the Protocol on Sustainable Tourism as well as other strategic decisions.

F. Latin America

33. Argentina continues its strong commitment to sustainable mountain development through the Committee for Sustainable Development in Mountain Regions of Argentina. The Committee has included new members, launched a national photographic contest and held capacity development workshops. Argentina is also cooperating with the Government of Colombia by sharing its national experience within the Andean FAO technical cooperation project. In addition, the Association for Social Development, a non-governmental organization, has led capacity development activities and the development of fair trade products and marketing strategies within a project to empower primary producers of Andean crops in the northern region of Argentina, with funding provided by the Spanish Agency for International Development Cooperation.

34. The Government of Peru has been actively promoting sustainable mountain development through the programme Sierra Exportadora, including a project to improve the income generation of mountain communities, a public-private investment fund to promote the intensification of the irrigation in the Andean regions, and a project to improve social inclusion and nutrition of children in rural areas. Peru also supported the meeting held in Cusco in September 2011 on the Regional Strategy for Conservation and Sustainable Use of High Andean Wetlands, formulated in the framework of the Convention on Wetlands, and organized InterCLIMA, the Peruvian platform in which civil society, academia, private sector and different levels of government report and exchange information on climate change.

35. The Consortium for Sustainable Development in the Andean Ecoregion (CONDESAN) supported the implementation of 17 Andes monitoring sites analysing the impact of climate change on mountain biodiversity, soil carbon, livelihoods and water regulation. It promoted four thematic research networks relating to the Andean forest, land use and cover change, the Global Observation Research Initiative in Alpine Environments and hydrological monitoring. CONDESAN provided technical assistance to the Secretary General of the Andean Community in the analysis of land use and land cover change dynamics in the Andean region and reviewed the current situation of adaptation to climate change in the Andes. A regional workshop on sustainable mountain development was organized with the Secretary General of the Andean Community, Christian Aid and the Government of Peru as a follow-up to the United Nations Conference on Sustainable Development. With the Andean Coordinator of Indigenous Organizations, CONDESAN organized a regional workshop on glaciers, water and biodiversity to discuss the zero draft of the outcome document of the Conference.

36. The Bolivian Mountain Institute is participating in BIO-THAW, an international project to model biodiversity and land use interactions under changing glacial water availability in the tropical high Andean wetlands of Bolivia.

37. In 2011, the Government of Chile participated in a workshop sponsored by the United Nations Educational, Scientific and Cultural Organization (UNESCO) on the impact of glacier retreat in the Andes and hosted one of the Mountain Partnership regional meetings on mountains and climate change. In 2012 the Ministry of Foreign Affairs, together with the Mountain Partnership and the FAO regional office, organized a regional workshop on monitoring the effects of climate change in protected mountains ecosystems.

38. In Guatemala, the United Nations Development Programme (UNDP), FAO, the Pan-American Health Organization and national ministerial counterparts are jointly implementing a project on vulnerability reduction to contribute to rural development in the Department of San Marcos. The project, running from 2010 to 2013, is funded by the Embassy of Sweden in Guatemala and focuses on micro-watershed planning.

39. Since 2011, six Andean governments — Argentina, Chile, Peru, Ecuador, Colombia and Bolivia — have been working together on a regional technical cooperation project, funded by FAO and implemented with support from the Mountain Partnership secretariat, to improve the participatory management of natural resources in the Andes by strengthening national institutions, raising political attention and increasing knowledge about mountain ecosystems and transboundary cooperation. The project also supports the strengthening of existing national mountain committees and promotes the establishment of such committees in countries where they do not yet exist.

40. In Ecuador, the project for the management of Chimborazo's natural resources is a joint effort by the Chimborazo Provincial Council, other national partners, FAO and GEF to support the conservation and sustainable management of the *páramo* ecosystem, its natural resources and the improvement of the livelihood of the local population. The project duration is from 2011 to 2016.

IV. International actions

A. Biodiversity conservation and mountain ecosystems

41. In 2004, the secretariat of the Convention on Biological Diversity adopted its programme of work on mountain biological diversity. At its tenth meeting, held in Japan in 2010, the Conference of the Parties to the Convention undertook an in-depth review of the programme's implementation, noting in particular the collaboration across agencies including FAO, ICIMOD, CONDESAN, the Mountain Partnership and the Alpine and Carpathian Conventions. ICIMOD has enabled regional learning and knowledge by linking science, policymaking and development work in transboundary landscape and river basin approaches. Networks such as the Global Observation Research Initiative in Alpine Environments and the Mountain Invasion Research Network have monitored threats to mountain biological diversity. Observance of International Mountain Day has raised awareness of the need for conservation and sustainable use of mountain biological diversity.

42. The Global Mountain Biodiversity Assessment Programme of DIVERSITAS International contributes to policy on the conservation and sustainable use of biodiversity in mountain regions. The Programme's portal (mountainbiodiversity.org) gives access to biodiversity data and tools for data quality control, online research and modelling of mountain biodiversity. Since 2011, the Programme has provided the framework and coordination for an international long-term ecological research network to improve long-term observations in mountains.

43. The Protocol on Conservation and Sustainable Use of Biological and Landscape Diversity to the Carpathian Convention was further ratified by Slovakia in 2011, bringing the total number of ratifications to six. The "BIOREGIO Carpathians" project, a flagship project within the European Union strategy for the Danube region, aims at implementing the main provisions of the Protocol.

44. The Critical Ecosystem Partnership Fund launched a five-year conservation strategy for the Eastern Afromontane biodiversity hotspot, which comprises mountainous areas stretching from Saudi Arabia to Mozambique. The hotspot contains more than 10,000 species, around one third of which are endemic. The Ministry of Environment of Yemen and the Saudi Wildlife Authority helped guide the investment strategy.

45. Soluciones Prácticas has created the largest digital repository of information on camelid farming in Latin America, a sector that involves more than 150,000 families in Peru and Bolivia. Currently the portal contains 300 documents on themes including feeding, breeding, processing and marketing. Portal services include news, statistics, a specialist directory, publications and videos.

B. Climate change in mountain areas

46. As revealed by the rapid retreat of glaciers worldwide, mountains are early indicators of climate change. UNESCO programmes, such as the project entitled "Climate Change Impacts in Major Mountainous Regions of the World: Multidisciplinary Network for Adaptation Strategies (Africa, Asia, Latin America and Europe)", contribute to enhancing resilience to climate change through improved understanding of vulnerabilities and opportunities for adaptation and the development of strategies and policies based on scientific/evidence-based knowledge in major mountain regions. The UNESCO International Hydrological Programme has been coordinating glacier mass balance studies, research, training and capacity-building programmes in different mountain regions. Over the past 10 years, the UNESCO Man and the Biosphere Programme has implemented projects in many mountain biosphere reserves to assess the impacts of climate change.

47. UNEP is working collaboratively with UNDP and IUCN to implement the "Ecosystem-Based Adaptation in Mountain Ecosystems" project. Ecosystem-based adaptation is an emerging approach to helping people adapt to the adverse impacts of climate change. Currently the project is operating in Nepal, Peru and Uganda. This project is funded by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety of Germany. Austria supports UNEP in fostering regional cooperation on climate change in mountain regions including the Caucasus, Central Asia, the Andes and Africa drawing on the experience of the Alpine and Carpathian Conventions. Since 2011, UNEP has been a strategic partner in two projects funded under the European Union's Alpine Space Programme, one on the

use of climate change knowledge for adaptation in the Alpine space, the other on carbon-neutral Alps.

48. In 2011, ICIMOD together with the Centre for International Climate and Environmental Research in Oslo and the UNEP GRID-Arendal centre launched the five-year Himalayan Climate Change Adaptation Programme funded by the Government of Norway to enhance the resilience of mountain communities by generating knowledge on the effects of climate change on natural resources. In 2012, the European Union and ICIMOD launched a programme for livelihood development and mitigation of climate change impacts through adaptation in the Hindu Kush Himalayan mountain region.

49. The Mountain Partnership secretariat promotes better awareness of the threats posed by climate change and facilitates the work of its members. Within the framework of the World Bank-funded Strategic Initiative on Climate Change Impacts, Adaptation and Development in Mountain Regions, in 2011 and 2012 it organized four regional meetings (Latin America, Central Asia, Africa and the Middle East and North Africa region) to increase knowledge about the impact of climate change on mountain areas, discuss adaptation options and promote better alliances and cooperation among countries with mountain territories.

50. Mountain Day 1 was held in Durban, South Africa, on 4 December 2011 on the sidelines of the seventeenth session of the Conference of the Parties to the United Nations Framework Convention on Climate Change, organized by the Mountain Partnership secretariat, FAO, ICIMOD and GIZ with support from the World Bank. The event highlighted the critical role that mountain ecosystems play in climate adaptation and sustainable development as well as the vulnerability of mountains to climate change. Mountain Day 2 was held in Doha, Qatar, on 3 December 2012 on the sidelines of the eighteenth session of the Conference of the Parties, organized by the Mountain Partnership secretariat, FAO and ICIMOD with support from the World Bank, the Government of Nepal and other development partners. Plenary session discussions included climate change stories from various mountain regions, integrated management of mountain water resources and the role of mountains in food security and livelihoods. Key messages were conveyed to climate change negotiators during the closing high-level round-table session.

51. In April 2012, The Government of Nepal hosted an international conference on mountains and climate change in the context of the Mountain Partnership. The conference adopted a 10-point "Kathmandu Call for Action" calling on development partners, the United Nations system and multilateral organizations to ensure an adequate and effective flow of financial resources to mountain countries.

52. The International University of Kyrgyzstan organized an international conference on mountains and climate in Bishkek on 11 December 2012 to celebrate the tenth anniversary of the International Year of Mountains. Supported by UNEP and the Government of Kyrgyzstan, the conference brought together governmental officials, experts and international scholars.

53. The pilot programme for climate resilience, funded by the World Bank and working in close collaboration with 13 institutions and projects and with local land users, identified as many as 78 promising sustainable land management technologies and approaches for climate change adaptation in Tajikistan. These were entered into the global database of the World Overview of Conservation Approaches and

Technologies,, managed by the Centre for Development and Environment of the University of Bern.

C. Land degradation and desertification in mountain ecosystems

54. The crucial role of dryland mountains is underlined in a 2011 publication, "Highlands and drylands: Mountains, a source of resilience in arid regions", published by FAO together with the Mountain Partnership secretariat, the secretariat of the United Nations Convention to Combat Desertification, the Centre for Development and Environment and the Swiss Agency for Development and Cooperation.

55. The European Union "CASCADE" project aims to assess the resilience of sustainable land management practices to catastrophic shifts in mountainous dryland ecosystems in southern Europe. It is a collaboration between 14 European partners, mostly from Mediterranean countries, from Switzerland (Centre for Development and Environment, University of Bern), the United Kingdom (University of Leeds) and the Netherlands (University of Utrecht), coordinated by the Alterra institute of the University of Wageningen, Netherlands.

D. Mountain water and watershed management

56. As a part of the Hindu Kush Himalayan Cryosphere Monitoring Project funded by the Government of Norway, ICIMOD has been undertaking capacity-building activities in the region to enhance current knowledge and understanding of the cryosphere. ICIMOD is developing a regional cryosphere knowledge hub to improve and coordinate cryosphere programmes in the region and to contribute to the understanding of water resources and their management. In 2012, ICIMOD, with support from the Australian Agency for International Development, launched a transboundary approach for the management of the Koshi River basin in China, India and Nepal. The programme will enhance equitable and regionally coordinated water and hazard risk management through the development of evidence-based knowledge for integrated and inclusive decision support.

57. The Centre for Development and Environment was mandated in 2011 by the Swiss Agency for Development and Cooperation to implement a water diplomacy project in highland-lowland contexts in north-eastern Africa. Between 2011 and 2015, the Centre's developed knowledge centres in Ethiopia and Kenya to provide information for decision-making at the local and international levels. Watersheds for learning and research are being developed in Ethiopia, and a large number of water user associations are supported in Kenya and the United Republic of Tanzania.

58. An FAO interregional project funded by the Spanish Agency for International Development Cooperation between June 2010 and May 2013 has been active in three pilot watersheds, one each in Ecuador, Morocco and Mauritania. The objective is to demonstrate the feasibility and potential impact of collaborative watershed management to combat desertification and poverty in arid and semi-arid areas.

59. FAO is developing an e-learning capacity development tool to formulate, implement and monitor watershed management projects and plans. This programme aims to promote innovative watershed management in the public and private sectors. The training will focus on beneficiaries' needs, local conditions and available

expertise at the field level as well as on observed impacts of innovations introduced by completed projects.

E. Disaster risk management

60. The Second World Landslide Forum, hosted by FAO in 2011 under the organizational umbrella of the International Programme on Landslides, brought together 700 world experts in landslide risk reduction. The meeting highlighted the importance of considering landslides in multi-hazard approaches and in the framework of livelihoods and food security.

61. ICIMOD and the World Meteorological Organization have been working to enhance regional cooperation in hydro-meteorological data collection and sharing for flood forecasting to support disaster prevention and flood management at the regional level. Twenty-three hydro-meteorological stations have been upgraded with real-time data transmission in four countries, with more stations planned for installation in 2013. In 2012, ICIMOD launched a pilot forest fire detection and monitoring system in Nepal, developed in close collaboration with the Department of Forests. The system facilitates the acquisition, processing and reporting of fire location information in an automated manner.

F. Indigenous peoples' issues

62. Indigenous mountain people and traditional mountain communities are the custodians of traditional knowledge. Their involvement in decision-making is a prerequisite for sustainable mountain development. The project of Fundación CoMunidad in Panama aims to preserve the cultural and natural heritage of San Miguel Centro, a town in the Penonome mountains that is the only community in the region to actively use traditional plants such as the tree bark of "Poulsenia armata" to dye objects or traditional garments. The project protects biodiversity and indigenous knowledge.

G. Gender and mountain development

63. The Utah Valley University and the Kyrgyz National Centre for Development of Mountain Regions organized a conference to address issues critical to women and children of mountainous nations. Held in Peru in 2012, the conference focused on mountain communities in the Andean regions of Peru and surrounding countries, continuing the traditions of two previous international conferences organized by the two institutions in Orem, Utah, United State of America in 2007 and 2011.

64. In October 2012, the Government of Bhutan and ICIMOD organized an international conference on gender and sustainable mountain development, attended by 170 policymakers, researchers and development practitioners from 27 countries. Key topics addressed by the conference included the impacts of disaster on women and men, the role of gender and women in rangeland management and land tenure and grabs.

H. Green economy in mountain ecosystems

65. The position paper of the Government of Kyrgyzstan on the green economy, developed in the lead-up to the United Nations Conference on Sustainable Development, places focus on the sustainable use and conservation of ecosystem goods and services provided by mountains as the basis for the country's long-term well-being. On the sidelines, the Kyrgyz delegation hosted an event entitled "Central Asian mountain countries on the path to a green economy: the experience gained and lessons learned from the example of Kyrgyzstan".

66. In September 2012, ICIMOD and UNEP organized an international conference on green economy and sustainable mountain development in Kathmandu. The conference led to the creation of a platform and building of a constituency for raising the agenda within the global debate, including the United Nations Conference on Sustainable Development.

67. A conference entitled "The future potential of European mountain forests: challenges and solutions between green economy and climate change", organized jointly by the Ministry for the Environment of Italy, the Institute for Timber Plants and Environment of Turin, the Forest Research Institute of Baden-Wuerttemberg and other partners of the "MANFRED" project, was hosted and facilitated by the Mountain Partnership secretariat and FAO in June 2012. The event dealt with the future of European mountain forests as linked to climate change and the opportunities of a green economy.

68. At the Verbier Green Pioneering Summit in 2011, the World Mountain Forum was launched as part of concerted efforts between private and public actors in Switzerland to make better use of International Mountain Day. The Day was celebrated around the globe by connecting partners and stakeholders from Nepal, Switzerland, the United States and Peru through live streaming. The pilot event was funded by the Swiss Agency for Development and Cooperation along with other public and private co-sponsors such as the Botza Association and implemented with regional partners such as CONDESAN, ICIMOD and the Whistler tourism organization.

I. High-quality mountain products

69. The promotion, processing and marketing of high-quality mountain products are becoming increasingly important for the improvement of the livelihoods of the inhabitants of mountain communities around the world. The Asian Development Bank is implementing the high-mountain agribusiness and livelihood improvement project, which is providing assistance to Nepalese farmers and rural enterprises. The goal is to make mountain agribusinesses commercially viable by taking advantage of improving rural infrastructure and increasing private sector interest in their goods.

70. ICIMOD released a trainer's resource manual on beekeeping training for farmers that has been translated into local languages and is widely used. The publication was developed as a resource for institutions in the region to establish and implement quality assurance systems in the honey supply chain to capitalize on the potential of high-quality mountain honey.

71. In 2012, the Programa de Desarollo de la Agroindustria Rural (PRODAR) of Peru held a conference on promoting national skills in agribusiness attended by students and rural smallholders coming from different regions of Peru, as well as representatives of the Universidad Nacional Agraria La Molina and CONDESAN. The conference highlighted the role of mountain biodiversity and biotechnology as strategies for rural development, and food security issues in the Peruvian Andes.

J. Food security and nutrition in mountain areas

72. At the third intersessional meeting of the of the Preparatory Committee for the United Nations Conference on Sustainable Development, held on 27 March 2102, the Government of Nepal, ICIMOD and the Mountain Partnership secretariat organized a side event on "The water-energy-food nexus: why mountains matter". The event focused on how mountains depend on renewable energy, safe and reliable water, food security and sustainable tourism and green jobs.

73. The International Year of Quinoa was launched at United Nations Headquarters in February 2013, underlining how quinoa, a nighly nutritious food which originated in the Andes, is a staple crop for indigenous mountain populations and has huge potential to help in the fight against hunger.

74. In 2006, the Kyrgyz Mountain Societies Development Support Programme introduced high-altitude kitchen gardens in the mountainous Alai and Chong-Alai districts of Osh oblast to address the poor nutritional status of the population. The project has expanded and currently 310 households are managing kitchen gardens in 28 villages of the two districts.

K. Policy and law for mountain development

75. Twelve years of advocacy by Euromontana, the European multisectoral association for cooperation and development of mountain areas, has culminated in a new European Union regulation that protects mountain products. Regulation 1151/2012 was officially published on 14 December 2012 and entered into force on 3 January 2013. In article 31 it introduces the optional quality term "mountain product" and recognizes the necessity of specific labelling.

76. The Parliament of Tajikistan is working towards a legislative act governing mountain-related issues. The act aims to improve living standards for mountain communities by creating jobs and economic opportunities and investing in conservation and in the sustainable use of natural resources. The strategy and action plan for sustainable land management in the High Pamir and Pamir-Alai mountains endorsed in 2011 served as the legislative basis for the initiative.

L. Education in mountains

77. The fifth edition of the International Programme on Research and Training on Sustainable Management of Mountain Areas (IPROMO) was organized in June 2012 in Ormea, Italy by the Mountain Partnership secretariat in collaboration with the University of Turin. Understanding and adapting to climate change in mountain areas was the topic of the course, which attracted around 30 participants, including

members of national delegations to the Conference of the Parties to the United Nations Framework Convention on Climate Change. The sixth edition of IPROMO, which took place in July 2013, focused on understanding upland watershed management and was tailored for technicians, planners and decision makers from mountain regions of developing countries.

78. The Himalayan University Consortium is a programme aimed at building partnerships among universities, ICIMOD and other partners in the Hindu Kush Himalayan region to promote mountain-specific research and learning. Through enhanced collaboration, networking and education it hopes to increase the capacity of professional women and men for sustainable mountain development.

79. The Master of Science programme in environment and development of mountainous areas, an interdisciplinary programme of postgraduate studies, has been held since 2008 at the National Technical University of Athens outpost in Metsovo, Greece. Its methodology is based on the notion that today's multi-dimensional developmental and socio-environmental issues of mountainous areas can only be addressed with holistic and interdisciplinary approaches.

80. By establishing *jailoo* kindergartens, the Mountain Societies Development Support Programme in Kyrgyzstan helps children in rural areas continue their educational development without having to sacrifice their cultural heritage. The programme has supported the establishment of 20 *jailoo* kindergartens in high mountain areas of Naryn and Osh oblasts since 2006. This approach has ensured that more than 520 children do not miss out on learning when they join their families on summer pastures to tend livestock.

M. Mountain research

81. The Swiss National Science Foundation continues to fund the Mountain Research Initiative, which facilitates the exchange of information through networks, in particular among Carpathian and south- eastern European mountain researchers. These networks supported the organization of the second Forum Carpaticum held in June 2012 in Stara Lesna, Slovakia and the workshop on interdisciplinarity in geoscience in the Carpathian Basin in October 2012. With additional funding from the Office of the Swiss State Secretary for Education and Research, the Mountain Research Initiative collaborated with the Institute of Mountain Research of the Austrian Academy of Sciences on the creation of a Swiss-Austrian alliance for the promotion of research on sustainable development in European mountains. The Mountain Research Initiative continues to collaborate with researchers in various institutes of the Chinese Academy of Science and has developed and promoted an international project to investigate the effects of global change on the Tibetan plateau and surrounding mountain ranges.

82. The Carpathian Convention signed a memorandum of understanding with the Science for the Carpathians Initiative. The memorandum of understanding aims to provide a lasting basis for collaboration in the fields of scientific research, project development and implementation, information exchange and knowledge transfer.

83. The NextData national research project managed by the Department of Earth System Science and Environmental Technologies of the Italian National Research Council and the Ev-K2-CNR Committee is devoted to assessing the effects of

climate and environmental change in mountain areas and building an integrated system of archives and portals to facilitate access to observational and numerical data on the state of the mountain environment. These archives will allow decision makers and stakeholders to design evidence-based adaptation and development policies. The Government of Italy also supports the Stations at High Altitude for Research on the Environment (SHARE) project, jointly implemented by UNEP and the Ev-K2-CNR Committee to study climate and environment in mountain regions. The project monitoring network currently includes 14 sites around the world.

N. Communications, networking and knowledge-sharing

84. In 2011, the International Mountain Day theme of "Mountains and forests" was chosen as a contribution to observance of the International Year of Forests. The Day raised awareness about the relevance of mountain forests and the role they play in a green economy as well as in climate change adaptation. Two publications were launched on the Day: *Mountain Forests in a Changing World*, jointly produced by the Mountain Partnership secretariat and the Swiss Agency for Development and Cooperation, and *Why Invest in SMD?* produced by FAO. In 2012, on the tenth anniversary of the International Year of Mountains, the International Mountain Day slogan was "Celebrating mountain life". Around 40 activities in over 28 countries were organized to raise awareness and celebrate the Day.

85. The international peer-reviewed journal *Mountain Research and Development* shares knowledge on sustainable mountain development issues by bringing together research findings and validated development experience. By the end of 2012, the journal had readers in over 130 countries with about 10,000 full-text downloads per month. Its editorial office is affiliated with the Centre for Development and Environment at the University of Bern.

86. In Central Asia, a network of mountain stakeholders facilitated by the Mountain Partnership secretariat now includes the mountainous regions of the Russian Federation, Dagestan and Altai. The network comprises 23 organizations active in five countries. The annual knowledge and experience-sharing event "CAMP Forum 2012" was held in Tajikistan in 2012 with funding from the Federal Environment Ministry of Germany and focused on increasing the benefits of sustainable land management for mountain communities.

87. By implementing initiatives dedicated to youth and media professionals, ICIMOD has increased awareness of sustainable mountain development and mobilized these groups as communicators, advocates and leaders. By March 2013, more than 500 youth and 75 media professionals from the Hindu Kush Himalayan region and beyond had been trained in mountain-related issues.

88. From 2010 to 2012, the Mountain Research Initiative was one of six international partners to run the European Union's "Mountain sustainability: transforming research into practice" project. The project aims to translate findings from European Union-funded research relevant to sustainable mountain development into language and formats that can be easily used by mountain practitioners. The Mountain Research Initiative produced a series of posters, brochures and videos communicating the research results.

89. In 2012 the Fundación Agreste participated in a pilot project with InfoAndina TV to produce reports and videos on major events related to sustainable development in the mountain regions of Argentina. InfoAndina TV is aimed at a young audience as well as actors in sustainable development and opinion leaders of the Andean countries.

V. United Nations Conference on Sustainable Development

90. Members of the Mountain Partnership, including the Governments of Italy and Switzerland, the World Bank, UNEP, ICIMOD and CONDESAN conducted a series of meetings and stakeholder consultations in preparation for the United Nations Conference on Sustainable Development. The Lucerne World Mountain Conference was convened in October 2011 by Switzerland. The event discussed draft reports focusing on the progress made in sustainable mountain development since the holding of the United Nations Conference on Environment and Development in 1992. An appeal was launched for inputs to the zero draft of the outcome document of the Conference. Subsequently the final regional reports along with policy briefs were prepared and used for dissemination among key negotiators. All materials were also made available at the Mountain Pavilion in Rio.

91. In 2011, during the nineteenth session of the Commission on Sustainable Development, Switzerland and Italy welcomed members of the Mountain Focus Group — an informal group of mountain countries at the United Nations — to discuss ways to affect the outcome of the Conference. The meeting was organized within the framework of the Mountain Partnership and mountain countries agreed on the priority of joining forces to increase their negotiating power and build awareness of mountains at all levels within the Conference process.

92. At the Conference, the Government of Peru led the organization of the Mountain Pavilion. The initiative aimed to showcase achievements and progress towards sustainable development in mountain regions. The third global meeting of the Mountain Partnership also took place on the sidelines of the Conference, attracting over 70 representatives of Governments and intergovernmental and non-governmental organizations.

93. Following the fourteenth ordinary session of the African Ministerial Conference on the Environment in September 2012, the Arusha Declaration on Africa's post Rio+20 strategy for sustainable development was issued. In paragraph 27, the participating ministers resolved to request UNEP, in collaboration with member States and partners, to support, with financial and technical assistance, through multilateral, North-South and South-South cooperation, the implementation of the agreed decision of the United Nations Conference on Sustainable Development regarding mountains in Africa.

94. The Mountain Partnership currently includes more than 200 members, including Governments, intergovernmental organizations and major groups. The Mountain Partnership brings countries, groups and organizations together to work towards a common goal: to improve the lives of mountain people and protect mountain environments around the world. It does this by tapping the wealth and diversity of resources, knowledge, information and expertise of its members to stimulate concrete action on the ground that will bring positive change in mountain areas. Building on 10 years of its existence, the Partnership is currently revisiting its

structure by working on a new strategy and governance to be endorsed at the fourth global meeting, to be held in Turkey in September 2013.

95. UNEP continues to promote leadership in the field of regional cooperation and approaches in mountain regions building on experience sharing of the Alpine Convention and the Carpathian Convention with other mountain regions such as the Caucasus, Dinaric and Balkans.

96. On the occasion of the United Nations Conference on Sustainable Development, the Mountain Partnership and the Global Island Partnership organized a joint side event with the aim of initiating a process for the establishment of a systematic dialogue and sharing of lessons between the two alliances.

97. The Mountain Research Initiative has established new partnerships with CONDESAN for the management of the Transecto Cordillera Americana, with the University of Pretoria for AfroMont, and with the Institute for Interdisciplinary Mountain Research of the Austrian Academy of Sciences.

VI. Recommendations

98. Since the last report of the Secretary-General on the topic of sustainable mountain development (A/66/294), significant progress has been made in terms of implementation, awareness-raising, institutional strengthening and international collaboration. In particular, the outcome document of the United Nations Conference on Sustainable Development, "The future we want", included three paragraphs devoted to mountains which further highlighted how benefits deriving from mountain regions are essential for sustainable development. The document urges States to strengthen cooperation and existing arrangements, while calling for increased international support for sustainable mountain development. The General Assembly, in its efforts to address the challenges of sustainable mountain development in a manner that is consistent with chapter 13 of Agenda 21, the Johannesburg Plan of Implementation, the Millennium Development Goals, and the post-2015 development agenda, may wish to reiterate some of the possible courses of action for Governments such as those set out below:

1. Recommendations related to international processes

(a) **Renew efforts to ensure that mountain issues are prioritized within development agendas and processes dealing with poverty reduction, food security, climate change, green economy and other issues that are critical to sustainable development in mountain areas;**

(b) **Support the collaborative efforts of the Mountain Partnership and encourage the active involvement of relevant governmental, civil society and private sector institutions at the national, regional and global levels;**

(c) **Call upon FAO, UNEP and UNESCO to cooperate in supporting the implementation of paragraph 211 of "The future we want";**

(d) **Promote, where relevant, the establishment of regional mechanisms for coordinated and integrated transboundary cooperation and knowledge sharing for sustainable mountain development, strengthen existing mechanisms**

such as the Alpine and the Carpathian Conventions and promote the exchange of experiences and lessons learned;

(e) Invite States and other stakeholders to strengthen implementation of the programme of work on mountain biological diversity of the Convention on Biological Diversity as a contribution to the well-being of people living in mountain regions and the achievement of the Aichi Biodiversity Targets of the Strategic Plan for Biodiversity 2011-2020 and sustainable development in mountain regions;

(f) Support better integration of mountain issues in intergovernmental discussions, in particular in the context of the United Nations Framework Convention on Climate Change and the United Nations Convention to Combat Desertification in promoting the adoption of mountain-related work programmes; take advantage of the potential of mountain forests for carbon storage and sequestration and of their consideration in Reduced Emissions from Deforestation and Forest Degradation (REDD) and REDD-plus programmes;

2. Policy recommendations

(g) Encourage the consolidation of existing or the establishment of new national committees, bodies and mechanisms to strengthen intersectoral coordination and collaboration for sustainable development in mountain areas;

(h) Ensure the increased involvement of local authorities, as well as other relevant stakeholders, in particular the rural population, indigenous peoples, civil society and the private sector in the development and implementation of programmes related to sustainable mountain development;

(i) Encourage States to specifically include mountain-specific policies in national sustainable development strategies and provide an urgent response to current challenges, including climate change and poverty reduction, and support developing countries and countries with economies in transition through bilateral, multilateral and South-South cooperation, as well as through non-traditional arrangements, such as decentralized cooperation;

(j) Develop strategies for adaptation and mitigation of climate change that take into account the specific situation of mountain environments and communities; integrate those strategies into the National Adaptation Programmes of Action process of the United Nations Framework Convention on Climate Change;

(k) Develop and improve disaster risk management and resilience strategies in mountain areas to cope with extreme events such as rockfall, avalanches, glacial lake outburst floods, landslides and the impacts of climate change;

(l) Develop policies and strategies to foster the supportive, protective and ecologic functions of mountain forests and their contribution to climate change mitigation, biodiversity conservation, disaster risk reduction, sustainable land use, water supply and green economy;

(m) Promote the conservation and sustainable use of increasingly scarce resources from mountain areas and integrate this action with the mobilization

of additional funds through both increased national budgetary allocations and innovative funding mechanisms for adaptation;

(n) Elaborate strategies, programmes and policies for promoting food security in mountains and undertake studies to better understand the vulnerability of mountain communities with a view to increasing their resilience and ensuring their livelihoods;

(o) Enhance public services, particularly in the health and education sectors, and improve transport and communication infrastructures in mountain areas;

(p) Support education, extension and capacity-building programmes, especially among local mountain communities, to further sustainable mountain development at all levels, building in particular on the experiences of the International Programme on Research and Training on Sustainable Management of Mountain Areas;

(q) Ensure that indigenous peoples' cultures, traditions and knowledge are fully recognized and included in development policy and planning in mountain regions, and that access and agreed upon rights to land and natural resources are respected and mountain multiculturalism is valued;

(r) Strengthen the role of mountain women in planning and decision-making processes that affect their communities, cultures, livelihoods and environments;

3. Recommendations related to financial mechanisms

(s) Increase levels of investment and funding for sustainable mountain development through innovative financial mechanisms such as the involvement of the private sector, foundations and local authorities; mobilize voluntary financial contributions from donors, particularly from the Organization for Economic Cooperation and Development and middle-income countries;

(t) Promote an enabling environment for mountain family farming, especially in view of the International Year of Family Farming in 2014, through the development of programmes promoting high-quality mountain products, the improvement of access of mountain communities to markets, improving the overall value chain process and promoting collaboration and cooperation that are beneficial for communities;

4. Recommendations for awareness-raising

(u) Support the development and implementation of communications, capacity-building, advocacy and outreach activities for sustainable mountain development at all levels, taking advantage of the opportunities provided annually by the International Mountain Day on 11 December;

(v) Continue promoting awareness of the global importance of mountains and their sustainable development among youth, ensuring that they become valid advocates and communicators for the future of mountains;

5. Recommendations for research

(w) Support increased and better coordinated research efforts at all levels to gain an improved understanding of environmental, economic and social drivers of change affecting mountain regions and promote the collection of disaggregated data from mountain areas as the basis for informed decision-making.